



**COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION**

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DIVISION 6

PHOTOBIOLOGY AND PHOTOCHEMISTRY

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**25th Session of the CIE
25 June – 2 July 2003
San Diego, CA, USA**

August 2003 Newsletter

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Diego

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Short Report on the CIE Session 2003

The 25th Session of the CIE was held in San Diego, CA, USA from 25 June to 2 July 2003, preceded and followed by the administrative meetings of the Board of Administration, General Assembly, Finance Committee, Division Directors and Publication Board. All CIE Divisions also held their annual meeting during that time.

The Session was opened on 25 June with a paper by H. Schmitt, USA on "A Trip to the Moon and Illumination There From". Invited speakers were I. Lewin (USA) on "Lighting in Outer Space", G. Brainard (USA) on "Photoreception for the Biological and Behavioral Effects of Light in Humans: Relevance to Architectural Lighting" and P. Boyce (USA) on "Lighting Research for Interiors: The Beginning of the End or The End of the Beginning".

Workshops were held on:

- Visual appearance metrology
- Solar protection
- Color appearance in imaging
- Lighting parameters for LED's
- Lighting education
- Lighting research

The full Proceedings will be available in autumn.

New Board of Administration for the Quadrennium 2003-2007

President: Wout van Bommel, The Netherlands
Past-President: Hans Allan Löfberg, Sweden
Vice-President Publications: Franz Hengstberger, South Africa
Vice-President Technical: Warren Julian, Australia
Vice-President: Jean Bastie, France
Vice-President: Haris S. Mamak, India
Vice-President: Ken Sagawa, Japan
Vice-President: David S. Sliney, USA

Secretary: János Schanda, Hungary
Treasurer: Michael Seidl, Germany
Division 1 Director: Sharon McFadden, Canada
Division 2 Director: Teresa Goodman, UK
Division 3 Director: Marc Fontoynont, France
Division 4 Director: Pentti Hautala, Finland
Division 5 Director: Nigel Pollard, UK
Division 6 Director: Ann Webb, UK
Division 8 Director: Todd Newman, USA

CIE Awards

At the Closing Session of the Conference, CIE certificates were awarded to:

Mr. Jacques Roberge, Canada
Senior Engineer Shukui Bing, China
Prof. Dahua Chen, China
Prof. Yiping Cui, China
Prof. Jingse Li, China
Senior Engineer Suhui Qu, China
Prof. Dazun Zhao, China
Prof. Taiming Zhou, China
Prof. Dr. Siegfried Kokoschka, Germany
Prof. Klaus Witt, Germany
Dr. Gyula Lukács, Hungary
Dr. Sueko Kanaya, Japan
Dr. Noburo Ohta, Japan
Dr. Yoshihiko Ohtani, Japan
Dr. Hiroaki Sobagaki, Japan
Martin (M.H.F) van Ooyen, Netherlands
Sergei Ashurkov, Russia
Artem Atayev, Russia
Alexey Korobko, Russia
Anthony Haydn Willoughby, UK

Heartiest congratulations to the recipients of the awards. The Central Bureau would like to thank them for their contribution to the CIE and would like to wish them good health and much success in their future activities. May we rely also in the future on their expertise!

**Minutes of the CIE Division 6 Meeting
June 30th, 2003
Sunrise Room
Town and Country Hotel
San Diego, CA, USA**

1. In Attendance:

Rolf Bergman
Jean-Pierre Césarini
Vibeke Clausen
Kjell Inge Daae
Yvon Deslauriers
Jan Grzonkowski
Werner Horak
Andrew Jackson
Takao Kawaguchi
Johan van Kemenade
Kohtaro Kohmoto
Hans Allan Lofberg
Janos Makai
Kathleen Murray
Eliyahu Ne'eman
Uli Osterwalder
Masako Saito
Masako Sasaki
David Sliney
Shu Takeshita
Natasha van Tonder
Jennifer Veitch
Richard Vincent
Ann Webb
Apologies: Stephen Wengraitis, left due to illness

2. Approval of Agenda. Two versions of the agenda had been circulated. All attendees had received the version circulated from DD6 and this was the version accepted. There was a request for discussion of Officers for 2003-7 and this was inserted under item 13 (General) of the approved agenda. It was noted that there was a need for the Division to discuss the International Lighting Vocabulary (ILV), and this deferred to an informal meeting after the adjournment of the main meeting.

3. Approval of the minutes of the 20th meeting of Division 6. The minutes of the 2001 Division meeting in Istanbul were approved.

4. Director's Report. *David should probably write a few lines on this! Points I noted:*

Terms of Reference - The terms of reference of the Division remain unchanged. They are "To study and evaluate the effects of optical radiation on biological and photochemical systems (exclusive of vision)".

New Division Director - Ann Webb was formally appointed to succeed David Sliney as Division Director at the Board of Administration meeting on 24th June (see item 13 for other Officers)

Division 6 Web Site - The division web site, hosted by the U.S. National Institute of Standards and Technology (NIST), needs updating. This requires assistance from NIST which it is hoped will be forthcoming in the near future. Robert Saunders, who recently retired from NIST, has offered assistance.

Recent and Future Symposia - Division 6, together with Lighting Research Organisation, had organised a very successful International Symposium on Lighting and Health in Florida, November 2002. The new CIE President, von Bommel, had asked whether a similar CIE meeting could be arranged (see item 12).

Regarding Technical Committee (TC) Approval - The different means of approval of TC output were explained. If the aim is to produce a standard that must be widely accepted and upheld for many years to come, then the process is very exhaustive and takes years because time is required to gain practical experience of using the standard and for approval by consensus to be gained. A TC Report describing the "state of the art" or proposing a standard or method goes through a less-exacting process and can appear much quicker (eg the CIE

erythema action spectra was published as a report in 1987, but not officially adopted and published as a standard until 1997). If there is a need for more rapid publication, then an accelerated system uses external experts to approve the report for publication.

TC Status - Updates on TC status are included under item 7.

5. Secretary's Report. David Sliney reported that the secretary, Ambler Thompson, had unfortunately had severe personal problems in the past few years and had been unable to fulfil all of his responsibilities. Stephen Wengraitis had taken over most of the secretarial functions, and had expressed a willingness to serve as full secretary for the next session. The offer was gratefully accepted. Apologies had been received from Stephen, who was unwell.

6. Editor's Report. David Sliney reported that the Editor, Myron Wolbarsht, was not present, but that he had done some work on the ILV (see item 15).

7. Progress Reports from Technical Committee Chairs. Reports were given by the Chairs when present, or by David Sliney.

6-08 Guidelines for Obtaining Action Spectra

Erin Chaney (interim chair) had made good progress with the work of the TC but now wishes to pass on this role. David Sliney will take over as Chair, subject to Board approval. Current state of the effort was presented during the week's poster sessions.

6-11 Systemic Effects of Optical Radiation on Humans

Jennifer Veitch reported that the Committee had a fluctuating membership, but a draft report had been submitted to national delegates for ballot. The deadline for voting is September and the report can be seen on the CIE web site.

6-15 A Computerised Approach to Reflection, Transmission and Absorption Characteristics of the Human Eye

A draft report had been expected and not yet appeared. David Sliney will follow this up.

6-21 Cataractogenesis by Low Level Exposure to Ambient Ultraviolet Radiation

There are two positions within the TC on this subject. There is a weight of evidence suggesting that UVB is the causal agent, but there may also be another UVA mechanism. Both positions will be represented in a draft report.

6-23 Generalized Action Spectra for Plant Responses to Wavebands from 280 to 1100 nm

Martyn Caldwell has agreed to take over as Chair of this TC, which has been inactive for some time, subject to board approval and agreement of the current chair, Donald Krizek.

6-24 Sunscreen and UVA

Met earlier in San Diego, with the discussion also encompassing the related TCs 6-28 and 6-31. Jean-Pierre Césarini noted that the report for this TC was virtually complete and would soon be ready for the approval process.

6-25 Spectral Weighting of Solar Ultraviolet Radiation

The report has been published as CIE Document 151:2003.

6-28 Standardization of Sunscreen Testing

Jean Pierre Césarini reported that a request for methods of sunscreen testing from the TCC had produced 5 different methods, but no agreement on which method would be acceptable as a standard. The next process will be to write a state of the art review of the 5 methods in current practice and proceed from there.

6-29 UV Protection and Clothing

Met earlier in San Diego. The draft report was updated and approved and there were a number of

actions allocated to members to provide information to complete parts of the report. It was agreed that protection factors above 50 would be useful for people with photoallergies or sun sensitising medication and the report will reflect this. New recent figures and references were also added.

6-31 Immediate Pigment Darkening

Jean Pierre Césarini is ready to write the report and hopes to circulate it in the near future.

6-32 Action Spectrum for Photocarcinogenesis (Non-melanoma Skin Cancers)

Published as a report with 6-34. The action spectrum is also in the scientific literature (as the van der Leun-de Gruijl -Forbes curve). Now there is a need to generate a standard publication from 6-32.

Jean-Pierre Césarini reported that IEC TC 61MT16 (*check*) “Standardisation of use of UV sources in social and domestic use of UV for tanning” was using the action spectrum of 6-32 to define the total number of sessions per year (chronic damage), and CIE erythema for determining the length of the first and subsequent sessions (acute damage).

The 6-32 action spectrum has also been adopted by ICNIRP and EUROSkin.

6-33 Photoimmunological Effects Mediated Through the Skin.

This report was sent to CB about 6 years ago but was considered too technical and was partially redrafted. Césarini will assist in translating the original document into more-approachable lay language. The chair plans to meet (possibly with Sliney) and discuss editorial issues in the document, and to add new ground-breaking material in this area relating to the evolution of melanocytic skin cancer.

6-34 (see 6-32)

6-35 Present State of UV Disinfection

Richard Vincent informed the meeting that the report is complete and is in the D6 balloting process.

6-36 UV Protective Qualities of Shading Materials

Natasha van Tonder reported that a literature review had been completed in Istanbul and a measurement programme undertaken. The next step will be to develop and validate a mathematical model to predict shade ratios under different structures. This phase of work is scheduled for completion by the end of the year. A technical report will be produced first, followed by a standard.

6-37 Light and Retinal Disease

There are two opposing scientific views on this subject that must be represented. The document was recently reviewed by Dr. Maria Ines de Wilde and Prof. Joan Roberts. Kjell Daae from Norway was invited to join the TC.

6-39 UV Radiation of Lighted Environments

Kohtaro Kohmoto has reported that the current draft was discussed in Istanbul, and has a draft report containing many useful lamp spectra. He was asked to consider incorporating some of the work from TC 6-06 that was never published and was closed in 1991.

6-41 A Proposed Global UV index.

In the final ballot for a standard (although already in use as such).

6-43 UV Water Disinfection

Dr. Cabaj (recently appointed as TC chair) is very active in this field but was not present at the meeting to report.

6-44 Illuminators for Treatment of Infant Hyperbilirubemia

Myron Wolbarsht has recently reported that a TC meeting on this subject was held in Lake Buena

Vista, Florida in November 2002. Studies performed in Florence, Italy were discussed. A draft report is expected soon.

6-45 Optical Radiation Hazard Measurements in the Work Space

Parallel work on this subject within CEN has slowed the work of this TC. UV work is done, visible and IR are almost complete. Standards are already being quoted in Germany and the work needs to be pushed to completion (role for Karl Schulmeister to link the two documents?). The CIE and CEN documents have slightly different purposes: The CIE document is intended as a background report while the CEN document is more prescriptive and aimed at measurement technology. The two documents should send the same message and use the same vocabulary.

6-46 Standard Action Spectrum for UV Disinfection

Petra Rettberg should be formally approved as the new chair – to be taken to the Board meeting.

6-47 Photobiological Lamp Safety Standard

This has been published as a standard, but has not yet been adopted by IEC (TC 34). The goal is to have a joint CIE/IEC standard that is globally accepted but there are differences between the two bodies in respect of defining risk groups and the resulting responsibilities for classifying and labelling products. Michael Seidl is to follow up on points of discrepancy.

6-48 Typical Minimum Erythema Doses

Review of research results is underway. This report should provide background information for IEC work on sunbeds (ie how much UV exposure is required to get and maintain a tan).

6-50 Photodegradation of Pharmaceuticals

The new TCC (Steven Baertschi) has spoken with David Sliney about recent progress. Uli Osterwalder was asked to liaise with this TC.

6-51 Standardised Solar Spectral Irradiance Distribution for Sunscreen Testing

In a joint meeting with TC 6-28, in San Diego the TC chair Robert Sayre was asked to expand the scope of this TC to cover phototoxicity testing.

6-52 Determination and Measurement of Passive UV Air Disinfection

Richard Vincent reported that a Lighting Research Centre publication on this subject had been completed and he was now forming a TC to work on the CIE report.

6-53 Personal Dosimetry for UV Radiation – Update

The work is on-going.

6-54 Standardised Action Spectrum for Vitamin D Synthesis in Human Skin

A draft report has been circulated within the TC. There is a need for numerical values as well as the pictorial action spectrum originally published. The theoretical action spectrum could also be calculated using chemical kinetics and skin optics (Irina Terentskaya). This could be compared with the original experimental work and possibly clarify the action spectrum at its ends. Animal studies could be used to help determine the extreme endpoints.

6-55 Light Emitting Diodes

There is a problem as to whether to classify an LED as a laser or a lamp for safety evaluations – both have merits and both present problems, depending on how the LEDs are arranged and used. In Europe LEDs have to be classified as lasers due to the IEC low voltage regulation.

A report of a comparison of laser/lamp and CIE/IEC regulations (with some surprising results) was circulated to the TC members, but there has been no response to date. There was a call for new members of this TC.

6-56 Infrared warming cabins

A TC meeting was held in San Diego. A report is

nearing completion but it was suggested that some Japanese scientists be invited to join the committee as Japan is where IR cabins are widely used, and where many of the health claims (unsubstantiated in the West) originate.

8. Progress from Reporters.

Consideration on Terms of UV-A, -B and -C, Reporter Masako Sasaki.

Copies of the report were circulated. Professor Sasaki asked whether UV-A or UVA should be used for notation and was advised that UV-A is accepted notation.

The current UV bands follow a definition determined physically by filters and TC6-26 suggested that the existing bands be retained. The physical limits are not always readily applicable to a biological continuum so if people wish to use a different waveband they should simply give the wavelength limits, or use a different name, but should always define their waveband. Professor Sasaki asked for UV action spectra to be sent to her to consider in this context.

Museum Lighting, Reporter Eliyahu Ne'eman

What began as a D6 reportership was subsequently moved to D3 where it became TC 3-22. The resulting report has gone to CIE CB for review before publication.

In summary it found that UVR should be kept from museum exhibits, but that visible radiation also causes damage – however, this is required for visitors to see! Many different materials and colours, and their attendant action spectra, have to be considered.

9. Progress Reports from Liaisons with ICNIRP, WHO, IEC and ISO.

(No notes provided on this topic)

10. Proposals for Dissolutions of TCs and Reporterships

TCs 6-14, 6-16 and 6-25 have all been published and should be closed.

TC 6-42 is recommended to close, but the agreement of the TCC Seidlitz should be sought first.

TCC of 6-08 should be changed to David Sliney.

TCC of 6-23 should be changed to Martyn Caldwell, if the current chair (Donald Krizek) is agreeable to this.

11. Proposals for New TCs and Reporterships.

Proposed TC – UVC photocarcinogenesis from germicidal lamps. A TCC needs to be identified before this can be approved by the Board.

Proposed TC - TC 6-16 should be reconvened as a new TC to produce a standard. The title is Standardisation of terms and action spectra for blue light and retinal thermal hazard. The TCC will be Kohtaro Kohmoto and terms of reference will be provided for approval by the Board.

Proposed TC - Division 5 have approved a reportership on the Effects of (outdoor) lighting on Ecosystems, under the chairmanship of Scott Davis (US). They seek D6 members for a potential TC on this subject and propose a joint meeting or workshop at the mid-sessional when the initial report should be available.

Proposed Reportership - A new reportership on UV absorbing clothing additives and changes with UV

laundering will be held by Uli Osterwalder.

12. Future Meetings. The 26th Session will be held in Beijing in 2007. The mid-sessional will be in Leon, Spain in May, 2005 and the organisers will need to know if D6 plan to meet there.

An expert symposium on Light and Health has been proposed for September/October 2004, probably at Bureau facilities in Vienna, and this would constitute the venue for the next D6 meeting. David Sliney will organise the Symposium and asks that he be notified of any potentially conflicting meetings.

13. General – D6 Officers

The D6 Officers for the next session are:

Director: Dr. Ann R. Webb (UK)

ADD, Photodermatology: Dr. Jean-Pierre Césarini (FR) for at least one year. There are two potential candidates to succeed him – Gillian Murphy from Dublin and Honigsmann from Vienna.

ADD, Photobiological Standards & Measurements: Dr. Karl Schulmeister (AT)

ADD, Photobiological Standards: vacated by Karl Schulmeister

Editor: Myron Wolbarsht (US)

Secretary: Stephen Wengraitis (US)

Kohtaro Kohmoto gave his opinion that as CIE is an International body the vacant ADD post should be filled by someone from Asia. This rationale was accepted should there be a suitable candidate, and Kohtaro then volunteered to take on the role of ADD (Photobiological Standards) himself. He assured the meeting that he would be an active ADD as requested by the President, and his self nomination was accepted.

An honorary D6 tube of SPF 50 sunscreen was

passed from outgoing DD6 David Sliney to incoming DD6 Ann Webb.

The meeting included an address from the new CIE President Wout van Bommel. He outlined the role and importance of CIE and his vision for the future of CIE. The work is done predominantly by volunteers, who were acknowledged and thanked. In the modern world CIE must become a lean and efficient organisation and the President exhorted the volunteers to continue with their tasks, but only if they had the time and effort to commit to holding office or serving on a TC or in some other capacity. Long standing, unfinished business serves nobody well and van Bommel looks forward to presiding over an efficient and productive organisation.

14. Adjournment. The meeting was officially adjourned at 1515.

15. Post-Meeting Discussion on the International Lighting Vocabulary.

Salient points:

- The old list will stand unless there are clear objections/replacements for existing terms.
- There is a need to add new terms from TC reports. Janusz Beer is compiling a list of definitions from 10 years of TC reports and this will be circulated.
- Kohtaro Kohmoto had collected one extensive list of terms that had already been culled in Istanbul. Unfortunately the culled list was not available. This process needs completing for the D6 vocabulary. It was suggested that initially a list of terms to be *excluded* be circulated, as objections may be easier to elicit than acceptance of the inclusive list.

The D6 list needs to go to the Division for a vote, then be amended if necessary, and must be sent to the Bureau by 1/7/04. Thus time is pressing.

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| <p>6-01 Actinic Effects of Optical Radiation on Man</p> <p>TC Chair: Sandor Ferenczi</p> <p>TC Status: Completed, published in 1987 report from Res Insti Techn Phys, Hungarian Academy of Sciences</p> |
| <p>6-02 Reference UV-Erythema Action Spectrum</p> <p>TC Chair: Alistair McKinlay</p> <p>TC Status: Completed, published in CIE Journal 6/1, 1987, CIE 106-1993.</p> |
| <p>6-03 Photo-kerato-conjunctivitis</p> <p>TC Chair: Bernhard Steck</p> <p>TC Status: Completed, published in CIE Journal 5/1, 1986.</p> |
| <p>6-04 Selected Photobiological Information</p> <p>TC Chair: Charles C.E. Meulemans</p> <p>TC Status: Closed at Durban meeting, 1997; data available, no publication.</p> |
| <p>6-05 Actinic Effects on Plants</p> <p>TC Chair: G.S. Sarytchev</p> <p>TC Status: Completed, published in CIE Journal 6/2, 1987.</p> |
| <p>6-06 UV Actinic Sources of Relevance To Illuminating Engineering</p> <p>TC Chair: Kohtaro Kohmoto</p> <p>TC Status: Closed, 1991, no publication.</p> |
| <p>6-07 Recommendation of the Methods of Measurement of Optical Radiation In Terms of Its Effects on the Corresponding Receivers</p> <p>TC Chair: G.S. Sarytchev</p> <p>Transferred to Division 2, TC 2-31, no publication.</p> |
| <p>6-08 Guidelines for Obtaining Action Spectra</p> <p>TC Chair: New chair sought.</p> <p>TC Status: Open.</p> <p>Terms of Reference: Guidelines for Obtaining Action Spectra Definitions (detector, effective radiant quantities, responsivity, spectral responsivity, action spectra, threshold radiant exposure, threshold exposure period). Bunsen-Roscoe law; type of detectors; general relation between effect and irradiation; principles of obtaining action spectra; monochromatic irradiation; sources (random parameters); measurement of irradiance on the detector; measurement of the effect of irradiation.</p> <p>Background: 1998 – Draft circulated and comments received. 2002 – Additional editing and revision recently performed by Erin Chaney.</p> |
| <p>6-09 Malignant Melanoma and Fluorescent Lighting</p> <p>TC Chair: Bernard Muel</p> <p>TC Status: Completed, published in CIE Journal 7/1, 1988.</p> |
| <p>6-10 Photobiological Effects on Human Skin</p> <p>TC Chair: Maxim Mutzhas</p> <p>TC Status: Completed, published in CIE 103-1993.</p> |
| <p>6-11 Systemic Neuroendocrine Effects of Optical Radiation on the Human</p> <p>TC Chair: Jennifer Veitch; Institute for Research in Construction; NRC Canada, Bldg. M24, Room 322; Ottawa, Ontario K1A 0R6; Canada ; Tel:+1 (613) 993-9671; Fax:+1 (613) 954-3733; Email:jennifer.veitch@nrc.ca</p> <p>TC Members: Dr. George Brainard, G. van den Beld</p> |

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| <p>TC Advisory Members: Dr. Morris Waxler, Dr. Norman Rosenthal, Dr. Charmane Eastman, Dr. Michael Terman, Dr. Dave Dinges, Mr. Richard Vincent</p> <p>TC Status: Open.</p> <p>Terms of Reference: Provide the CIE with a concise summary document on the systemic effects of ocularly detected optical radiation with the relevant, key scientific references. Specifically the document will introduce the controlled laboratory and clinical studies on the effects of light on human physiology, mood and behavior. Studies on use of ocular light therapy for clinical disorders as well as for improving human adaptation to shift work and intercontinental jet travel will be discussed. How these new findings may change future architectural lighting strategies will be considered.</p> <p>Background: Initial master list was completed in 1991. Dr. Brainard revised his approach in 1995 to provide a general review, since the first document was much too large for a TC Report. DD6 had recommended that it be replaced by a review of the current state of knowledge in this area, along with the original bibliography. The revision of the terms of reference was approved in New Delhi in 1995. A colleague of Dr. Brainard's may replace him as the chair. Dr. Jennifer Veitch has been appointed as chair, replacing Dr. Brainard. The committee will prepare a draft report, based on Dr. Brainard's work, for a presentation in Toronto, Ontario, Canada, in October 1999 at a joint meeting of the Canadian and U.S. National Committees. A completed report should be in the hands of the Division Director by the end of 1999. The report will be coordinated with that of Dr. Kuller's TC6-16. It is suggested that CIE publish these two reports together with TC3-16 (Psychological Aspects of Lighting), to form a handbook of information on inter-related issues.</p> <p>A summary presentation on the draft report was made at the joint USNC-CNC technical conference in Toronto in October. Discussions among those members present concluded that the final report must include photoimmunologic effects as well as neuroendocrine effects. The report will not attempt to be comprehensive; rather, it will identify the current state of knowledge and areas for further exploration. The committee is committed to producing a draft report for the Division Director by 2000-Jun-30.</p> <p>2002 – 3rd draft being revised. Paper on this subject was recently presented at the LRO conference on Lighting and Human Health.</p> <p>2003- Jennifer Veitch reported that the Committee had a fluctuating membership, but a draft report had been submitted to national delegates for ballot. The deadline for voting is September and the report can be seen on the CIE web site.</p> |
| <p>6-12 Phototesting of Skin Application for Sun Protection (UV-B)</p> <p>TC Chair: Jean-Pierre Cesarini</p> <p>TC Status: Completed, published in CIE 90-1991.</p> |
| <p>6-13 Lighting Aspects of Large-Scale Plant Growing in Completely Protected Environments (“Dark Rooms”)</p> <p>TC Chair: G.S. Sarytchev</p> <p>TC Status: Closed for inactivity; work assumed by TC 6-42.</p> |
| <p>6-14 Blue Light Photochemical Retinal Hazard</p> <p>TC Chair: Kohtaro Kohmoto</p> <p>TC Status: Completed, published in CIE 138-2000. Standard work now being performed.</p> |
| <p>6-15 A Computerized Approach to Reflection, Transmission, and Absorption Characteristics of the Human Eye</p> <p>TC Chair: David Jack Lund; 7914 A Drive; Building 176; Brooks AFB, TX 78235-5138, USA; Tel (210) 536-4631; Fax (210) 536-3450; E-mail: Jack.Lund@brooks.af.mil</p> <p>TC Status: Open.</p> <p>TC Members: Not available.</p> <p>Terms of Reference: Design a working model, for the assessment of the actual amount of radiation reaching various eye structures.</p> <p>Background: 2000 – New chair appointed. Members sought. A draft report had been expected and not yet appeared. David Sliney will follow this up.</p> |
| <p>6-16 Psychobiological Effects of Lighting</p> <p>TC Chair: Rikard Küller</p> <p>TC Status: Completed, published in CIE 139-2001.</p> |
| <p>6-17 Spatial and Temporal Variability of Radiation Exposure and Human Behavior</p> <p>TC Chair: Lucia R. Ronchi</p> <p>1997 – Closed at Durban meeting, subject was discussed in a published document authored by Ronchi.</p> |
| <p>6-18 Evaluation of Potential Optical Hazards Associated with “Desk Top” Quartz Halogen Lamps</p> <p>TC Chair: Alistair F. McKinlay</p> |

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| TC Status: Completed, published in CIE 103-1993. |
| 6-19 Personal Dosimetry of UV Radiation TC Chair: Joachim Barth TC Status: Completed, published in CIE 98-1992. |
| 6-20 Phototoxicity in Domestic and Industrial Environments TC Chair: Jean-Pierre Cesarini; 83 Avenue Simon Bolivar ; Foundation Rothchild; 25, Rue Manin; 75019 Paris France; Tel : 011-33-1-480-36948 ; Fax: 011-33-1-480-36510 ; E-mail : jpcesarini@wanadoo.fr TC Status: Open. TC Members: Pr. J. Barth, Pr. F. Dall'Aqua, Pr. P. Thune, Mr. J. Unkovic, Montpellier, France Terms of Reference: To define a ratio between the potential future and benefits of a given chemical versus the potential risk of phototoxicity and photoallergy. Background: 1994 - A complete file of phototoxic and photoallergic compounds has been completed. They have been classified in 3 categories corresponding to: high frequency, and low frequency. Meeting is scheduled during 1994, after publication of the results of the European Community Commission. |
| 6-21 Cataractogenesis by Low-Level Exposure to Ambient Ultraviolet Radiation TC Chair: David H. Sliney; Commander, US Army CHPPM; MCHB-TS-OLO; Bldg. E-1950; APG, MD 21010 USA; Tel 410-436-3002; Fax: 410-436-5054; E-mail: David.Sliney@apg.amedd.army.mil TC Status: Open. TC Members: C. Barth, H. Taylor, S. Lerman, G. Perdiel, L. Ronchi, A. Medgyaszay, P. Sodenberg, R. Young Terms of Reference: To evaluate the current biological and medical evidence relating to ultraviolet radiation cataract. UV-B radiant energy has been shown to cause cataract in experimental animals, but the evidence for UV-A cataract is much less convincing too many. 2001 - Chair recently updated current draft. Background: Presently trying to resolve different points of view. Animal and human studies only point to UV-B; biochemical studies suggest UV-A. A draft report revised in 1994 and again in 1995. Report updated in 1998. |
| 6-22 Terminology and Units for Characterizing Photosynthetically Active Radiation for Plants TC Chair: Ted W. Tibbitts TC Status: Completed, published in CIE 106-1993. |
| 6-23 Develop Generalized Action Spectra for Plant Responses to Wavebands from 280 to 1100 nm TC Chair: Donald T. Krizek; Natural Resources Institute; Building 046A, BARC-West; Beltsville, MD 20705-2350; Tel: (301) 504-5324; Fax: (301) 504-6626; E-mail: krizekd@ba.ars.usda.gov TC Status: Open TC Members: Not available. Terms of Reference: To develop generalized action spectra for plant responses to wavebands from 280 to 1100 nanometers. Background: 2000 - Chair reported on progress and DD6 recommended summary report re: plant action spectra. 2003 – New chair sought, Martyn Caldwell considered; however, need to determine if Krizek is agreeable to this change. |

6-24 Sunscreen and UVA

TC Chair: Jean-Pierre Cesarini; 83 Avenue Simon Bolivar ; Foundation Rothchild; 25, Rue Manin; 75019 Paris France; Tel : 011-33-1-480-36948 ; Fax: 011-33-1-480-36510 ; E-mail : jpcesarini@wanadoo.fr

TC Status: Open.

TC Members: Not available.

Terms of Reference: In view of the importance of UVA (in matter of skin premature ageing, skin carcinogenesis, immune local or systematic depression), and because of lack of existing regulations to test for UVA protection, it is proposed to extend the work of TC 6-12 (concerning UVB protection) on high protection factor (SPF) sunscreens. The goal is to arrive at an international consensus on sunscreen testing for UVA protection. 2000 - Report will discuss relative merits of test methods and discuss state of knowledge.

Background: Meetings were held in Chicago, 16-30 June 1993. ASP Meeting. A second meeting was held in Washington, D.C., December 1993, and in Scottsdale, June 1994. A third draft is in circulation; however, a great difficulty has been encountered in achieving an international consensus, since there are at least three tests being promoted: one on immediate pigment darkening, one on delayed pigmentation and one using a photosensitizer. A move by the US Food and Drug Administration or other major regulatory body could force a consensus, but the route to resolution is unclear at this time. Some favor a report on the status of sunscreen testing at this time and explaining each proposed method.

Group met in August 1997. Report by chair at the Gaithersburg 1998 meeting stated that the document was written, but still no international consensus existed on UV-A sunscreen testing. TC report may be written as a "current status" report.

At Warsaw 1999, chair discussed difficulties of achieving a consensus in the cosmetics, phototoxicity and solar-protection communities on sunscreen testing; hence the report will review the relative merits of the 3 methods and report the state-of-the-art.

At San Diego 2003, chair believed that the report would soon be ready for approval process.

6-25 Spectral Weighting of Solar Ultraviolet Radiation

TC Chair: Stephen Wengraitis

TC Status: Completed, published in CIE 151:2003.

6-26 Standardization of the Terms UVA-1 and UVA-2

TC Chair: Jean-Pierre Cesarini

TC Status: Completed, published in CIE 134-1999.

6-27 Standardization of the Erythema Action Spectrum

TC Chair: Alistair F. McKinlay

TC Status: Completed, see TC 6-40.

6-28 Standardization of Sunscreen Testing: Method of UV-A Sunscreen Testing

TC Chair: Jean-Pierre Cesarini; 83 Avenue Simon Bolivar ; Foundation Rothchild; 25, Rue Manin; 75019 Paris France; Tel : 011-33-1-480-36948 ; Fax: 011-33-1-480-36510 ; E-mail : jpcesarini@wanadoo.fr

TC Status: Open.

TC Members: F. Wilkinson.

Terms of Reference: To develop standardized sunscreen testing procedures.

Background: 2000 - Group may correspond with similar TC 2-17. Much controversy exists over whether solar simulators are a good representation of real sunlight. Awaiting TC 6-24 report. Expect that report will discuss relative merits of test methods and discuss state of knowledge. At San Diego 2003, TC Chair stated that the report would be ready for approval process soon.

6-29 UV Protection and Clothing

TC Chair: Peter Gies; Ultraviolet Radiation Section ; Non Ionizing Radiation Branch; Australian Radiation Protection and Nuclear Safety Agency; Lower Plenty Road; Yallambie VIC 3085; Australia; Tel: +61 (3) 9433 2285; Fax +61 (3) 9432 1835; E-mail: peter.gies@health.gov.au

TC Status: Open

TC Members: J-P Césarini, B L Diffey, C Driscoll, K Hatch, J Leland, U Osterwalder, M Pailthorpe, LR Ronchi, M Saito, R Sayre, D Sliney, N. van Tonder, S Wengraitis, F Wilkinson, C F Wong

Terms of Reference: To develop standardized methods to measure the sun protective factor of fabrics based upon realistic exposure conditions (e.g. wet and dry states).

Background: Chair was changed to Peter Gies in 1995. A number of labs around the world participated in round-robin testing of samples, and a second round was performed more recently. The most recent study provided further information on the advantages and drawbacks of different test methods. The results compared well and supported the TCs view that in vivo testing would not be a requirement for fabric testing. Dr. Gies is pulling together the results from all the studies and is writing an overview report. Recent editing included addition of national standards information, more-thorough discussion of factors affecting fabric transmission, uncertainties, additional references and figures.

6-30 Dosimetry of UVR Exposure – UV Protection of the Eye

TC Chair: C. F. Wong

TC Status: Completed, published in CIE 134-1999.

6-31 Immediate Pigment Darkening

TC Chair: Jean-Pierre Césarini; 83 Avenue Simon Bolivar ; Foundation Rothschild; 25, Rue Manin; 75019 Paris France; Tel : 011-33-1-480-36948 ; Fax: 011-33-1-480-36510 ; E-mail : jpcesarini@wanadoo.fr

TC Status: Open.

TC Members: A. Chardon, R. Mascotto, Kaidbey, H. Honigsman, M. Mutzhas

Terms of Reference: To develop a standardized action spectrum for IPD (after review of contrasting published results of testing for immediate pigment darkening).

Background: Preparation of a draft following the proposal by the former chairman (A. Chardon) to CIE Division 6 and COLIPA. Meeting of TC 6-24 and TC 6-31 in early 1995 was postponed. Dr. Césarini will circulate a draft to the TC based upon the study of Irwin and Chardon. The IPD is really only stable after 2 hours (Chardon); however, a consensus may require two action spectra: one for immediate, post-irradiation and one is for a 1-2 hour delay.

At Warsaw 1999, chair discussed that IPD was no longer a key aspect and the report would show the current state-of-knowledge.

6-32 Action Spectrum for Photocarcinogenesis (Non-melanoma skin cancers)

TC Chair: P. Donald Forbes

TC Status: Completed, published in CIE 138-2000. 2002 - Standard work now being performed.

6-33 Photoimmunological Effects Mediated Through the Skin

TC Chair: Edward C. de Fabo ; Ross Hall, Room 101B; George Washington University Medical Center; Dermatology; 2300 I Street, N. W.; Washington, DC 20037; Tel: 202-994-3975; Fax: 202-994-3975; Email: ecd@gwuvvm.gwu.edu

TC Status: Open.

TC Members: D. Godar, F. Noonan, D. Sliney, H. Tuschl, S. Wengraitis

Terms of Reference: To prepare a report on the current state of knowledge regarding the effects of UVR photoimmunology aimed for the lighting engineering community.

Background: Initial draft circulated to TC members. CB suggested that the final draft was not suitable for publication unless it was re-written for the non-medical specialist. Prof. Wolbarsht agreed to attempt a lay interpretation, March 1995. Miller of FDA recommended some editing. Report was sent to Helga Tuschl of Seibersdorf Austria in 1998, which provided a glossary of immunology terms. Report will be edited by de Fabo and Dianne Godar of FDA.

Sliney recommended that a comparison between several biologically-weighted spectra be added to the report. The light sources will include fluorescent lights and solar spectra, and the biological weighting functions will include DNA damage, the ACGIH actinic UV hazard function, and contact hypersensitivity.

6-34 Testing Protocols for Photocarcinogenesis Safety Testing

TC Chair: P. Donald Forbes

TC Status: Completed, published in CIE 138-2000.

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| <p>6-35 Present State of UV Disinfection</p> <p>TC Chair: Richard Vincent</p> <p>TC Status: Document being reviewed by CIE for approval.</p> |
| <p>6-36 UV Protective Materials Used in Shading</p> <p>TC Chair: Natasha van Tonder; P.O. Box 395; Pretoria 0001; South Africa; Tel: +27 12 841-3618; Fax: +27 12 841-4458; E-mail: nvtonder@csir.co.za</p> <p>TC Status: Open.</p> <p>TC Members: F. Denner, S. DiDomenico, B. Diffey, C. Roy</p> <p>Terms of Reference: To investigate the properties of materials, such as tent or awning fabrics used in solar UVR shading devices, and develop standardized methods for the testing fabrics other than clothing that are used for UVR protection.</p> <p>Background: A major difficulty is to distinguish between material diffuse transmittance and area of the sky visible to the person under the shading material.</p> <p>First meeting held in Gaithersburg 1998 under new chair (van Tonder). Studies will hopefully be completed within the next year.</p> <p>A proposed protection factor based on shading material transmission, dimensions and shading geometry was discussed at the 1999 Warsaw meeting. At San Diego in 2003, van Tonder reported that a literature review had been completed in Istanbul and a measurement programme undertaken. The next step will be to develop and validate a mathematical model to predict shade ratios under different structures. This phase of work is scheduled for completion by the end of the year.</p> |
| <p>6-37 Light and Retinal Disease</p> <p>TC Chair: David H. Sliney; Commander, US Army CHPPM; MCHB-TS-OLO; Bldg. E-1950; APG, MD 21010 USA; Tel 410-436-3002; Fax: 410-436-5054; E-mail: David.Sliney@apg.amedd.army.mil</p> <p>TC Members: J. Marshall, M. Mainster, P. Gabel</p> <p>Terms of Reference: To prepare a report on the current state of knowledge regarding the alleged effects of light exposure as an etiologic factor in retinal disease. The report should be written to be understood by the lighting engineering community.</p> <p>Background: Initial draft completed by Prof. Mainster, revised by Prof. Marshall, and then material on animal studies added by Dr. Reme. The final draft re-circulated in TC being reviewed by DD Editor to determine if a "lay translation" is required. New animal data was recently provided. Group met at Gaithersburg 1998 meeting.</p> <p>2002 – Draft recently reviewed by Joan Roberts and Maria Ines de Wilde.</p> |
| <p>6-38 Photobiological Safety Standards for Lamps</p> <p>TC Chair: David H. Sliney</p> <p>TC Status: Completed, published in CIE 134-1999.</p> |
| <p>6-39 UV Radiation in Lighted Environments</p> <p>TC Chair: Kohtaro Kohmoto ; Chiyoda Kohan Co., Ltd.; Ginza Toshiba Bldg. 7F, ; 2-1, Ginza 5-chome, Chuo-ku, Tokyo; 104-8115 Japan; Tel 81-3-3575-0573; Fax: 81-3-3575-0596; E-mail: kohtaro.komoto@chiyodakohan.co.jp</p> <p>TC Status: Open.</p> <p>TC Members: Not available.</p> <p>Terms of Reference: To develop an evaluation method of UV radiation at lighted environments. To investigate UV spectral characteristics of filters and reflectors used for luminances, and interior environment.</p> <p>Background: Investigations have been completed and involve more than 50 lamps. Guidelines need to be established for lamps. Erythema reference action spectrum may be used along with discussion of risk groups. 2002 – Draft recently discussed at 2001 Istanbul meeting. Language editing recently performed by T. Hansen, S. Wengraitis, USACHPPM.</p> |
| <p>6-40 Erythema Reference Action Spectrum and Standard Erythema Dose</p> <p>TC Chair: Brian Diffey</p> <p>TC Status: Completed, published as CIE Std S007/E1998, ISO 17166:1999/CIE S 007/E-1998.</p> |
| <p>6-41 A Proposed Global UV Index</p> <p>TC Chair: Elizabeth C. Weatherhead</p> |

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| <p>TC Status: Completed, published in CIE 138-2000. 2002 - Standard work in progress.</p> |
| <p>6-42 Lighting Aspects for Plant Growth in Controlled Environments</p> <p>TC Chair: Harald Seidlitz; GSF-Forschungszentrum für Umwelt und Gesundheit GmbH; Institute fuer Bodenökologie / Arbeitsgruppe Expositionskammern; Ingolstaedter Landstraße 1; DE-85764 Oberschleissheim; Germany; Tel: +49-89-31872413; Fax: +49-89-31873389; E-mail: harald.seidlitz@gsf.de</p> <p>TC Status: Open.</p> <p>TC Members: Not available.</p> <p>Terms of Reference: Define the general prerequisites for growing terrestrial plants in controlled environments and the characteristics of both commercial and research facilities. Discuss the economic constraints of commercial production facilities, and the critical optical radiation parameters for successful culture. Examine the interaction of optical radiation with other environmental parameters. Identify new and current optical sources suitable for plant culture.</p> <p>Background: TC proposed at Durban meeting September 1997. Chair will likely be replaced by Seidlitz; changed due to health problems. Seidlitz was named the chair in January 1999.</p> |
| <p>6-43 UV Water Disinfection</p> <p>TC Chair: Viney Jain; Dr. B.R. Ambedkar Centre for Biomedical Research; University of Delhi; P.O.Box No.2148; Delhi 110 007 India; Tel: 91 11 725 6272; Fax 91 11 725 7730; E-mail: vineyjain@hotmail.com</p> <p>TC Status: Open.</p> <p>TC Members: K. Kohmoto, J. Malley, R. Vincent , G. Van den Beld</p> <p>Terms of Reference: To examine the state of knowledge on UV water disinfection</p> <p>Background: TC proposed at Durban meeting September 1997. Dr. Vincent and Dr. Van der Beld will look for other possible members. J. Malley will prepare a first draft. Next meeting planned for Warsaw 1999. The three technical committees related to UVR disinfection met jointly at a discussion group of the Warsaw 1999 meeting. 2000 – New collaborative efforts being considered to move this TC forward.</p> |
| <p>6-44 Illuminators for Treatment of Infant Hyperbilirubinemia</p> <p>TC Chair: Myron L. Wolbarsht; Dept. of Psychology; Box 90086; Duke University; Durham, NC 27708-0086; Tel: 919-660-5670; Fax: 919660-5672; Email: deryag@psych.duke.edu</p> <p>TC Status: Open.</p> <p>TC Members: Pratesi, K. Jailink , D. Slaney</p> <p>Terms of Reference: To examine the state of knowledge on infant hyperbilirubinemia, and recommend the formation of a standardized action spectrum for comparative evaluation of therapy lighting.</p> <p>Background: No action spectrum currently exists on infant hyperbilirubinemia, but data have been gathered. At Gaithersburg 1998, chair emphasized the need for manufacturers to create an illuminator that would provide constant output. Duke researchers have not only developed a control circuit to do this, but have also developed a meter to measure how much bilirubin is in the body by measuring the skin's reflectance 2000 – Some material submitted to chair to help with this effort.</p> |
| <p>6-45 Optical Radiation Hazard Measurements in the Work Space</p> <p>TC Chair: Robert Angelo; Gigahertz Optik, Inc.; E-mail: b.angelo@gigahertz-optik.com</p> <p>TC Status: Open.</p> <p>TC Members: A. Barrett, Brose, Brueggemeyer, C. Driscoll, G. Hee, Hietanen, Jossen, K. Kohmoto, M. Morys, Ott, BauA, D. Slaney, B. Tengroth, U. Wester, T. Goodman</p> <p>Terms of Reference: To examine the methods of measurement and the required accuracy of field instruments and broad-band meters used to measure the optical radiation hazards in the workplace. Emphasis is on UV and blue light hazards.</p> <p>Background: Group and new recruits met at Gaithersburg 1998 and discussed a first draft for the report. 2001 – New TC chair. 2003 - Parallel work within CEN has slowed the work of this TC. The CIE and CEN documents have slightly different purposes, as the CIE document is more of a “background report” and the CEN document is more “prescriptive.” The two documents should send the same message and use the same vocabulary, however.</p> |

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| <p>6-46 Standard Action Spectrum for UV Disinfection</p> <p>TC Chair: Petra Rettberg; Radiation Biology; Linder Hoehe; D - 51170 Koeln; Germany; Tel: +49 2203 6014637; Fax: +49 2203 61970; E-mail: petra.rettberg@dlr.de</p> <p>TC Status: Open.</p> <p>Terms of Reference: To develop a standardized action spectrum for UV disinfection; DIN, US and other published action spectra are not consistent.</p> <p>Background: Group met at Gaithersburg 1998, will gather data and then write first draft. Other members outside the USA will be sought. The three technical committees related to UVR disinfection met jointly at a discussion group of the Warsaw 1999 meeting</p> |
| <p>6-47 Photobiological Safety of Lamps and Lamp Systems</p> <p>TC Chair: Rolf Bergman</p> <p>TC Status: Completed, published in CIE Std S 009/E:2002.</p> |
| <p>6-48 Typical Minimal Erythema Doses</p> <p>TC Chair: Janusz Beer; HFZ-114, 12709 Twinbrook Parkway; Rockville, MD 20852; Tel: (301) 443-7159; Fax: (301) 227-6775; E-mail: jzb@cdrh.fda.gov</p> <p>TC Status: Open.</p> <p>TC Members: A. Anders, J.-P. Césarini, B. Diffey, J.C. van der Leun</p> <p>Terms of Reference: To propose typical minimal erythema doses for different skin types, for use in the evaluation and revisions of different standards for UV-emitting appliances and in educational efforts related to the risk of UV exposure.</p> <p>Background: Met at Gaithersburg 1998. Defined the goals and ways to accomplish them. Proposed three categories of human skin for the purpose of artificial tanning. Proposed ways of development of tanning schedules using 3 levels of exposure.</p> <p>Collection of information involves clinical research conducted by the U.S. FDA along with National Cancer Institute, Harvard University, Utrecht University, and Philips Research Laboratories. The study is conducted on a cohort of healthy volunteers representing six skin types (according to the Fitzpatrick classification) and six racial/ethnic origins (as defined by the U.S. Office of Management and Budget). The results of this study will be analyzed together with the other published and unpublished data to support the TC 6-48 document. Review of research results is currently underway. Results should provide background info for IEC work on sunbeds (how much UVR is required to get and maintain a tan).</p> |
| <p>6-49 Infrared Cataract</p> <p>TC Chair: Myron L. Wolbarsht; Dept. of Psychology; Box 90086; Duke University; Durham, NC 27708-0086; Tel: 919-660-5670; Fax: 919-660-5672; Email: deryag@psych.duke.edu</p> <p>TC Status: Open.</p> <p>TC Members: A. Cullen, E. Rydal, M. Mainster, T. Okuno, K. Sasaki, B. Tengroth, J. Zuclich.</p> <p>Terms of Reference: Not available.</p> <p>Background: Not available.</p> |
| <p>6-50 Photodegradation of Pharmaceuticals</p> <p>TC Chair: Steven Baertschi; Eli Lilly and Company; Tel: (317) 276-1388; Fax: (317) 277-2154; E-mail: BAERTSCHI_STEVE_W@LILLY.COM</p> <p>TC Status: Open. TC Members: S. Pugh, N. Searle, H. Tonnesen</p> <p>Terms of Reference: Not available.</p> <p>Background: 2002 – Efforts mostly halted, due to retirement of some members and abandonment of the project by others. Consensus issues are highly unlikely. Chair Piechocki resigned, effort was assumed by Baertschi.</p> |
| <p>6-51 Standardized Solar Simulator Spectral Irradiance Distribution for Sunscreen Testing</p> <p>TC Chair: Robert Sayre; Rapid Precision Testing Laboratories; P. O. Box 1342; Cordova, TN 38018-1342; Tel (901) 386-0175; Fax (901) 386-7218; E-mail: rptl@aol.com</p> <p>TC Status: Open.</p> <p>TC Members: J.-P. Césarini, F. Wilkinson, J. Chandon, D. Berger</p> <p>Terms of Reference: To provide a standardized solar simulator emission spectrum for testing sunscreens. Spectral tolerance values will be provided.</p> <p>Background: 2000 - Chair reported drafting an initial proposal for a spectral distribution. 2003 - In a joint meeting with TC 6-28 in San Diego, Sayre was asked to expand the scope of this TC to include phototoxicity testing.</p> |

6-52 Proper Measurement of Passive UV Air Disinfection Sources

TC Chair: Richard Vincent; Manager and Lighting Specialist; Department of Community Medicine; Saint Vincents Hospital and Medical Center; 153 W. 11th Street; New York, NY 10011; Tel: (212) 604-8034;; Fax: (212) 604-7627; E-mail: vincentrl@msn.com

TC Status: Open.

TC Members : A. Cabaj, R. Bergman, K. Kohmoto

Terms of Reference: To specify the biologically meaningful distances and positions in installations of UV germicidal lamps for open, upper-air disinfection.

Background: Vincent has reported that a Lighting Research Centre publication on this subject had been completed and he was now forming a TC to work on the CIE report.

6-53 Personal Dosimetry for UV Radiation

TC Chair: Gerda Horneck; DLR FF-ME, Radiation Biology; Linder Hoehe; 51147 Koeln; Germany; Tel: (49)2203-601-3594; Fax: (49)2203-61970; E-mail: Gerda.Horneck@dlr.de

TC Status: Open.

TC Members: Not available.

Terms of Reference: Not available.

Background: 2001 – TC recently met, discussing the structure of the report and assigning report tasks to TC members. 2003-Work reported to continue on-going.

6-54 Standardised Action Spectrum for Vitamin D Synthesis in Human Skin

TC Chair: Michael Holick; 715 Albany Street, M-1013; Boston, MA 02118; Phone: (617) 638-4545; Fax: (617) 638-8882; E-mail: mfholic@bu.edu

TC Status : Open.

TC Members: R. Bouillon, J. Eisman, M. Garabedian, F. Glorieux, B. Dawson-Hughes, G. Jones, S. Reddy, T. Suda, I. Terenetskaya, A. Webb

Terms of Reference : To evaluate the current state of knowledge in the photobiological action spectrum for the production of Vitamin D in human skin, and to propose a standardized action spectrum for general use in estimating effective exposures in humans of differing skin types. The Technical Committee will examine the impact of natural skin pigmentation, skin optics, and skin exposure area and describe the effective dose per unit of skin area that produces a given quantity of serum Vitamin D. The output will be a technical report and standard.

Background: Draft report has been circulated. Theoretical spectrum could be calculated using chemical kinetics, skin optics. This could be compared with the original experimental work and animal studies to clarify the extreme endpoints.

6-55 Light Emitting Diodes

TC Chair: Werner Horak; Werner Horak; Siemens AG; CT ES RD; Corporate Office for Radiation Safety and Dangerous Goods Transportation; Otto-Hahn-Ring 6; D-81730 Munich; Germany; Tel: +49 89 636 47059; Fax: +49 89 636 40162; Email: werner.horak@siemens.com

TC Status: Open.

TC Members: Not available.

Terms of Reference: Not available.

Background: There is a problem as to whether to classify an LED as a laser or a lamp for safety evaluations – both have merits and both present problems, depending on how the LEDs are arranged and used. In Europe LEDs have to be classified as lasers due to the IEC low voltage regulation. A report of a comparison of laser/lamp and CIE/IEC regulations (with some surprising results) was circulated to the TC members, but there has been no response to date. There was a call for new members of this TC.

6-56 Infrared Warming Cabins

TC Chair: Jan Stolwijk; 3705 Green Ash Court; Beltsville, MD 20705; Tel: (+1) 301 937-1945; Fax: (+1) 301 595-9788; E-mail: stolwijk@prodigy.net

TC Status: Open.

TC Members: M. Hietanen, H. Meffert, W. Schmidt, K. Schulmeister, D. Sliney, F. Urbach (US)

Terms of Reference: To report on the potential health benefits and risks in the use of far-infrared heating cabinets, sometimes referred to as infrared “saunas.” This entails a review and report on the known effects from a physiological standpoint and to determine the dose relationships that poses a potential risk for skin injury from excessive irradiation.

Background: A TC meeting was held in San Diego. A report is nearing completion but it was suggested that some Japanese scientists be invited to join the committee as Japan is where IR cabins are widely used, and where many of the health claims (unsubstantiated in the West) originate.

Proposed TC – UVC photocarcinogenesis from germicidal lamps. A TCC needs to be identified before this can be approved by the Board.

Proposed TC - TC 6-16 should be reconvened as a new TC to produce a standard. The title is Standardisation of terms and action spectra for blue light and retinal thermal hazard. The TCC will be Kohtaro Kohmoto and terms of reference will be provided for approval by the Board.

Proposed TC - Division 5 have approved a reportership on the Effects of (outdoor) lighting on Ecosystems, under the chairmanship of Scott Davis (US). They seek D6 members for a potential TC on this subject and propose a joint meeting or workshop at the mid-session when the initial report should be available.